

PATENT

Serial No. 09/811,640

Second Amendment in Reply to Notice of Allowance of March 26, 2004

The following Listing of Claims will replace all prior versions, and listings, of claims in the application, where claims 5 and 11 are amended as follows:

Listing of Claims:

1 1. (Previously Presented) A high-efficiency low-pressure gas
2 discharge lamp which includes a discharge vessel and at least two
3 spatially separated capacitive coupling-in structures and operates
4 at an operating frequency f , wherein each capacitive coupling-in
5 structure is formed by at least one dielectric having a thickness d
6 and a dielectric constant ϵ , each dielectric being subject to the
7 condition $d/(f \cdot \epsilon) < 10^{-8}$ (cm) (seconds) thereby providing a high
8 luminous flux in a small structural volume.

1 2. (Previously Presented) A low pressure gas discharge lamp as
2 claimed in claim 1, wherein at least one dielectric is subject to
3 the condition $d/(f \cdot \epsilon) > 10^{-9}$ (cm) (seconds) thereby allowing the at
4 least two spatially separated capacitive coupling-in structures to
5 operate as a ballast.

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1 3. (Previously Presented) A low pressure gas discharge lamp as
2 claimed in claim 1, wherein the operating frequency f is in the
3 range of from 150 Hz to 1 MHz.

1 4. (Previously Presented) A low pressure gas discharge lamp as
2 claimed in claim 1, wherein the dielectric constant of the
3 dielectric has an essentially negative temperature dependency.

1 5. (Currently Amended) A low pressure gas discharge lamp as
2 claimed in claim 1, ~~Previously Presented wherein~~ the discharge
3 vessel is shaped essentially as a hollow cylinder having an inside
4 diameter d_i which is smaller than 10 mm.

1 6. (Previously Presented) A low pressure gas discharge lamp as
2 claimed in claim 5, wherein the capacitive coupling-in structure is
3 shaped essentially as a hollow cylinder, has an inside diameter d_i
4 and is connected to the discharge vessel in a compression proof
5 manner.

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1 7. (Previously Presented) A low pressure gas discharge lamp as
2 claimed in claim 1, wherein the discharge vessel is filled with a
3 filling gas containing at least one inert gas.

1 8. (Previously Presented) A low pressure gas discharge lamp as
2 claimed in claim 7, wherein the filling gas contains mercury.

1 9. (Previously Presented) A low pressure gas discharge lamp as
2 claimed in claim 1, wherein the operating frequency f is less than
3 150 kHz.

1 10. (Previously Presented) A low pressure gas discharge lamp
2 as claimed in claim 1, wherein the discharge current of the gas
3 discharge is more than 10 mA.

1 11. (Currently Amended) A low pressure gas discharge lamp as
2 claimed in claim 1, wherein the dielectric ~~constant~~ consists of a
3 paraelectric, ferroelectric or anti-ferroelectric solid material.

1 12. (Previously Presented) A low pressure gas discharge lamp
2 as claimed in claim 1, wherein the discharge vessel consists of an

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3 UV transparent material and is filled with a filling gas emitting
4 UV.

1 13. (Previously Presented) A device for the backlighting of a
2 liquid crystal display, including at least one low-pressure gas
3 discharge lamp with a discharge vessel, at least two capacitive
4 coupling-in structures, operating at an operating frequency f , as
5 the light source, and an optical system for producing backlighting,
6 wherein each capacitive coupling-in structure consists of at least
7 one dielectric having a thickness d and a dielectric constant ϵ ,
8 each dielectric being subject to the condition $d/(f \cdot \epsilon) < 10^{-8}$
9 (cm)(seconds) thereby providing a high luminous flux in a small
10 structural volume.